Sources of U.S. Wealth Inequality: Past, Present, and Future

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My view

- Great paper!
- Very nice synthesis of 30 years of quantitative theories of wealth distribution, incorporates most "frontier ingredients"
- Finding: benchmark HA model with these ingredients surprisingly successful in accounting for U.S. wealth inequality trends
- Overall: paper raises as many questions as it answers
  (and that is obviously a good thing!)

The "secret ingredient": process for asset returns

$$\text{return}_{it}(a) = \underline{r}_t + r_t^X(a) + \sigma^X(a)\eta_{it}$$

$$r_t^X(a) = \sum_{c \in C} w_c(a) \left(\bar{r}_{c,t} + \tilde{r}_c^X(a)\right)$$

$$\left(\sigma^X(a)\right)^2 = \sum_{c \in C} \left(w_c(a)\sigma_c^X(a)\right)^2$$

where η_{it} = idiosyncratic shock, w_c = portfolio share of asset class c

- generates Pareto tail which changes over time
- only $\underline{r}_t$ endogenous, determined in equilibrium
- everything else exogenous, "taken from data", e.g. Swedish data

Reduced-form nature reflected in conclusion (which I fully agree with):

- "Important step forward in noting just how important portfolios and asset prices are for inequality"
- "Next we need to understand households' portfolio choices better!"

Plan

1. One quibble and one question

2. Asset prices, wealth inequality and welfare inequality
    - Should we care if rich become richer because asset prices ↑?

One quibble and one question

Quibble:

- Assumed returns process $\Rightarrow$ excess returns exogenous in both time series and cross section
- Rules out some channels for wealth inequality $\uparrow$ by assumption
- Example: automation $\Rightarrow \alpha \uparrow \Rightarrow$ return premia $\uparrow \Rightarrow$ wealth ineq $\uparrow$
  (Moll-Rachel-Restrepo – note: exact mechanism above only in next iteration)
- Same applies to all other mechanisms via return premia

Question: saving behavior in model vis-à-vis data?

- Plot model-implied saving rates for different wealth percentiles?
- Could be useful for future work

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Pick up on authors' conclusion "just how important portfolios and asset prices are for wealth inequality"

Very much consistent with other evidence

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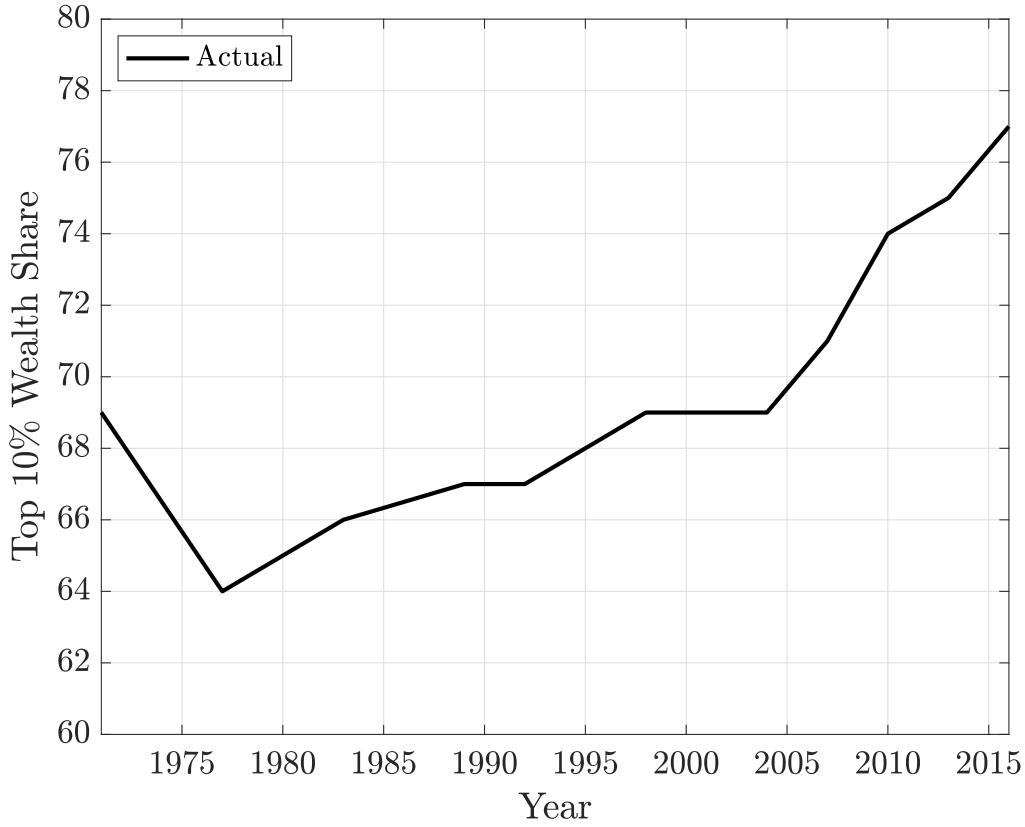

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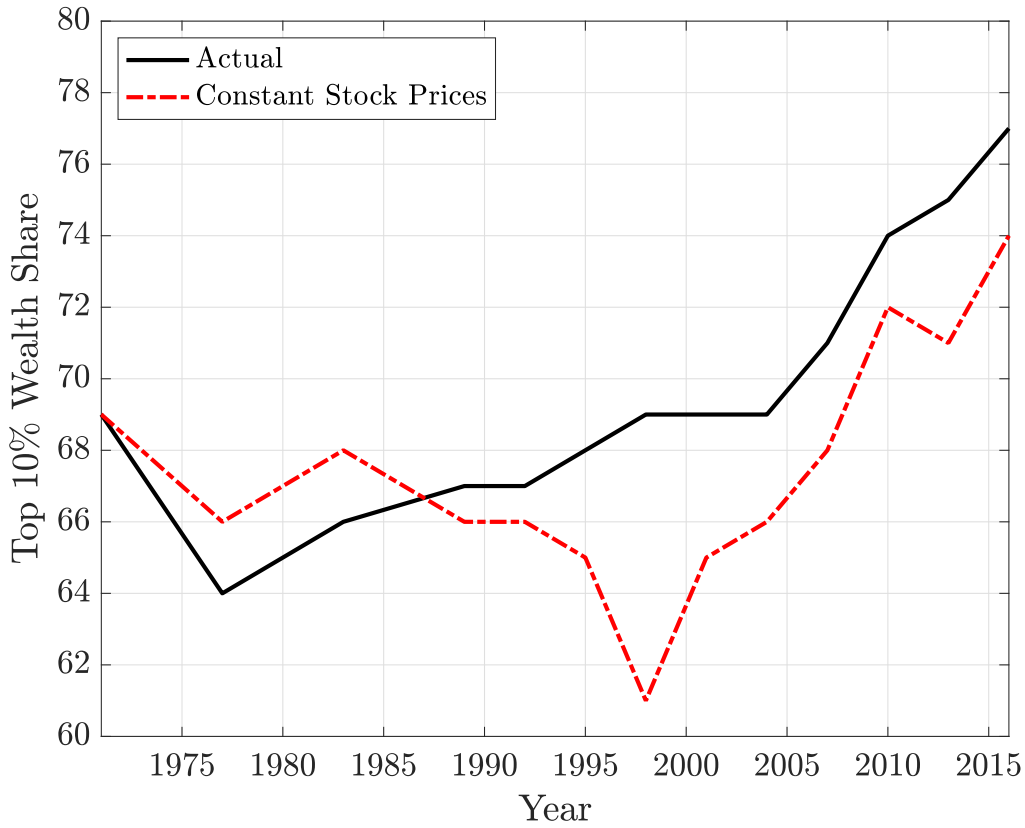

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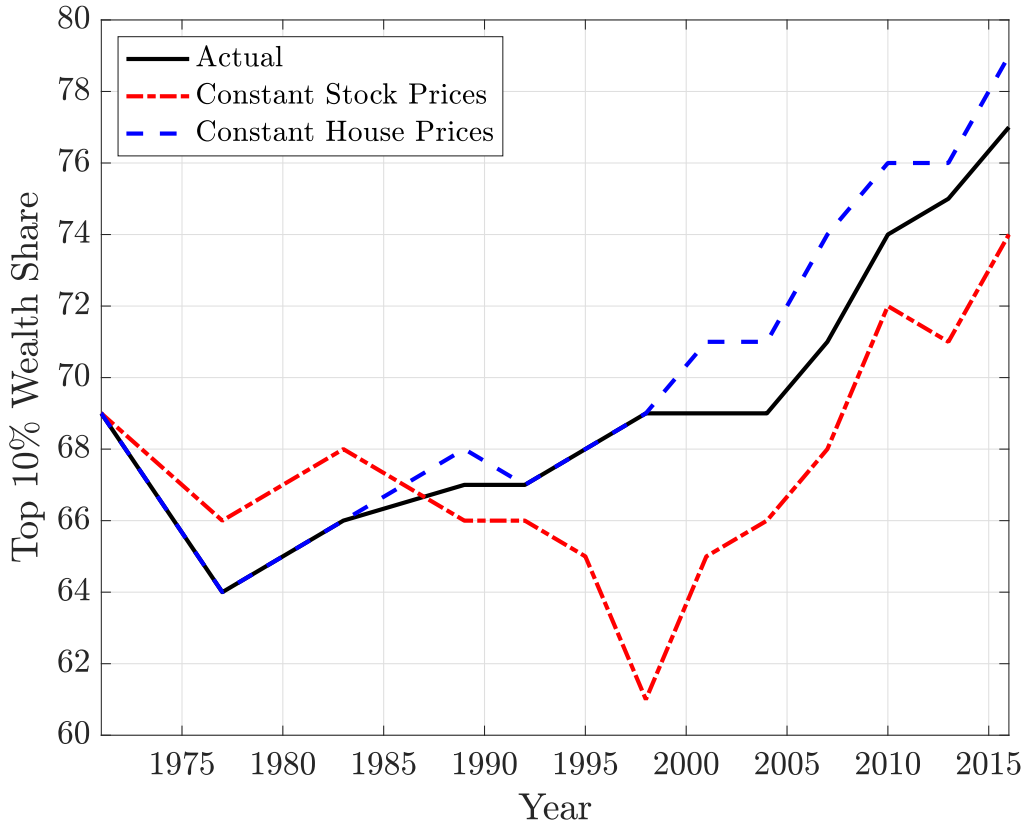

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- Martínez-Toledano, Feiveson-Sabelhaus, Fagereng-Holm-Moll-Natvik,...

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Emerging theoretical literature takes this idea seriously

- Gomez, Gomez-GouinBonenfant, Gârleanu-Panageas, Cioffi, ...

This raises an interesting question

If large fraction of increase in wealth inequality is due to asset price changes, should we care?

Do such asset price changes also increase welfare inequality?

- do those whose wealth ↑ also benefit in welfare terms?
- ... or are capital gains just "paper gains"?

Rest of my discussion: What does standard economic theory say about welfare effects of asset price changes?

To be clear: question above is separate from authors' positive question "why has wealth inequality increased?" – to me interesting regardless

Welfare effects of asset price changes?

- Think this through using simple 2-period model

- Heavily inspired by existing work

  1. Auclert (2019)
  2. work on house price changes
     Glaeser, Sinai-Souleles, Campbell-Cocco, Berger-Guerrieri-Lorenzoni-Vavra
  3. and even a John Cochrane blog post
     `https://johnhcochrane.blogspot.com/2020/01/wealth-and-taxes-part-ii.html`
  4. ... ?

- Some results are “folk knowledge” or exist in dispersed form

Welfare effects of asset price changes?

Three simple exercises in 2-period model

1. Exogenous asset price increases
2. Endogenous asset price increases with different sources
3. House prices

Main takeaways

1. What matters is not asset level but "investment plan" (buy/sell)
2. Source of capital gains matters: dividends vs discount rates
3. To first order no conceptual difference betw housing, other assets

Exercise 1: Exogenous asset price changes

Rich individual buys/sells asset k at price p paying dividend D

$$V(y, y', D, p) = \max_{c,c',k'} \; u(c) + \beta u(c') \quad \text{s.t.}$$

$$c + pk' = y + pk$$

$$c' = y' + Dk'$$

Wealth = pk so $p \uparrow \Rightarrow$ wealth $\uparrow$. Q: does it make individual better off?

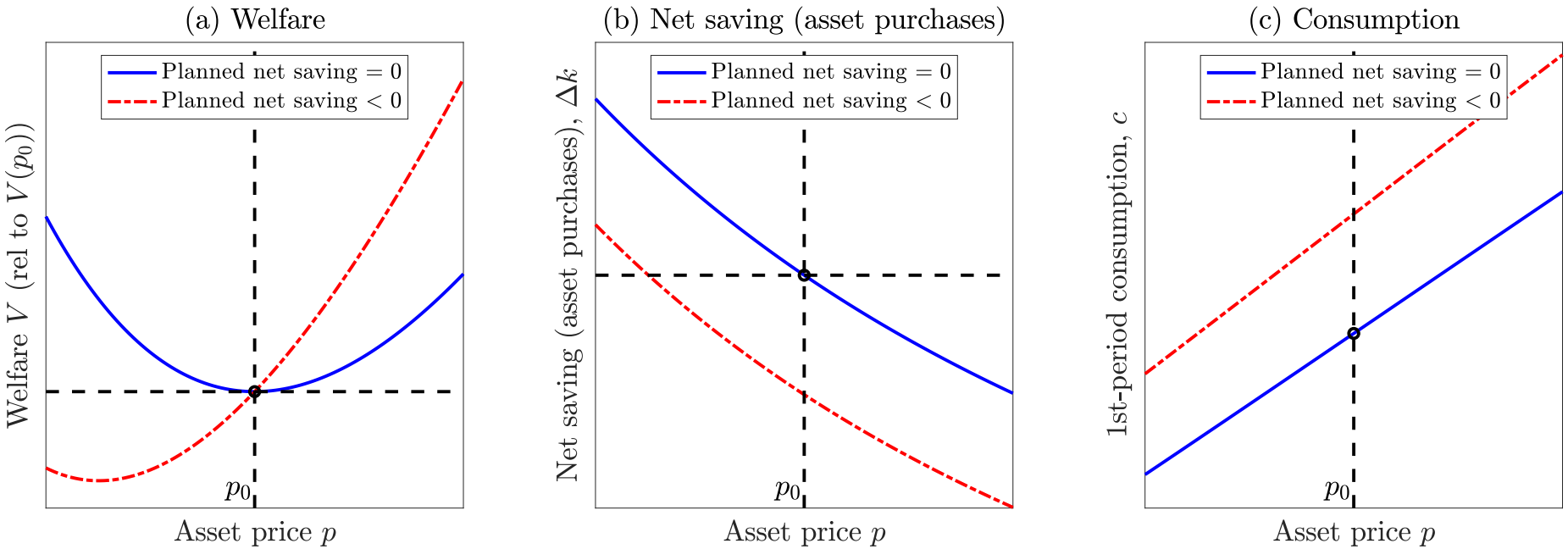
$$\frac{\partial V}{\partial p} = \lambda(k - k'), \quad \lambda = u'(c)$$

(Note: envelope theorem $\Rightarrow$ reoptimizing k' only has 2nd order effects)

What matters is not k but planned Δk

- $p \uparrow$ good news if planning to sell, bad news if planning to buy
- if $\Delta k = 0 \Leftrightarrow$ eat income each period, $c = y$, $c' = y' + Dk$, $dp > 0$ makes no difference, just "paper gain"
- How can wealth $\uparrow$ be ambiguous? Because also return $D/p \downarrow$

Exercise 1: Exogenous asset price changes



- Overall, welfare V is U-shaped function of p
- Sign of 1st-order term depends on planned Δk
- 2nd-order term > 0, reflecting gain from reoptimizing at new p
- If $\Delta k = 0$, $\partial V/\partial p = 0$ even though MPC out of dp, $\partial c/\partial p > 0$

Exercise 2: Different sources of asset price changes

Raises question: where does asset price change come from?

Endogenize p in simple way ($\neq$ full GE): bond, R set by monetary policy

$$V(y, y', R, D, p) = \max_{c,c',b',k'} u(c) + \beta u(c') \quad \text{s.t.}$$

$$c + pk' + b' = y + pk$$

$$c' = y' + Dk' + Rb'$$

Portfolio choice between b', k': p adjust to equalize returns

$$\frac{D}{p} = R \qquad \Rightarrow \qquad p = \frac{D}{R}$$

Asset price can increase for two reasons: $D \uparrow$ and $R \downarrow$

What are welfare effects of $p \uparrow$? Do they depend on source?

$$dV = \frac{\partial V}{\partial p}\left(\frac{\partial p}{\partial D}dD + \frac{\partial p}{\partial R}dR\right) + \frac{\partial V}{\partial D}dD + \frac{\partial V}{\partial R}dR$$

Exercise 2: Different sources of asset price changes

After a bit of algebra

$$\frac{dV}{\lambda} = k\frac{dD}{R} + \left(b' + pk' - pk\right)\frac{dR}{R}$$

Consider two polar cases

1. $p \uparrow$ entirely due to $D \uparrow$
2. $p \uparrow$ entirely due to $R \downarrow$

Case D: $p \uparrow$ entirely due to $D \uparrow$

$$\frac{dV}{\lambda} = k\frac{dD}{R} > 0$$

If source of $p \uparrow$ is higher dividends $D \uparrow$, welfare unambigously increases

Case R: $p \uparrow$ entirely due to $R \downarrow$

$$\frac{dV}{\lambda} = \underbrace{\left(b' + pk' - pk\right)}_{\text{net saving or "URE"}} \frac{dR}{R} \gtrless 0$$

Same logic as before

- What matters is change in asset positions (Auclert calls this "URE")
- If rich just eat income stream, $R \downarrow \Rightarrow p \uparrow$ does not affect welfare

Cochrane's great example

- "Bob owns company, giving \$100,000 a year income. Bob also spends \$100,000 a year. $R = 10\%$, so his company is worth \$1,000,000."
- "The interest rate goes down to 1%, and the stock market booms. Bob's company is now worth \$10,000,000. Hooray for Bob!"
- "But wait a minute. Bob still gets \$100,000 a year income, and he still spends \$100,000 a year. Absolutely nothing has changed for Bob!"

Can also see: if Bob instead dissaves, e.g. by selling some shares from time to time, then $R \downarrow \Rightarrow p \uparrow$ increases his welfare $dV > 0$

Summary so far

Welfare effect of asset price increase?

$$\frac{dV}{\lambda} = k\frac{dD}{R} + \left(b' + pk' - pk\right)\frac{dR}{R}$$

1. Source of capital gains matters: $R \downarrow$ vs $D \uparrow$?
   - $D \uparrow \Rightarrow p \uparrow$ unambiguously increases welfare of rich
   - $R \downarrow \Rightarrow p \uparrow$ has ambiguous welfare effect
2. Planned change in asset position matters
   - if rich just eat dividend stream, $R \downarrow \Rightarrow p \uparrow$ has no welfare effect
   - if rich dissave, also $R \downarrow \Rightarrow p \uparrow$ increases their welfare

Which case most relevant? **Need better empirical evidence!**

Housing

Housing differs from other assets:

1. not just asset but also consumption good
2. indivisibilities/adjustment costs

Common intuition: (1) by itself changes implications of price changes

Glaeser (2000):

- "A house is both an asset & a necessary outlay. When my house rises in value, that may make me feel wealthier, but since I still need to consume housing in the future, there is no sense in which I am actually any richer."

- "And because house prices are themselves a major component of the cost of living, one cannot think of changes in housing costs in the same way as changes in the value of a stock market portfolio."

Show: 1st-order welfare effects of price changes same as other assets

Housing

Same model as before but replace asset k by housing h:

$$V(y, y', R, p) = \max_{c,c',h',b'} u(c, h) + \beta u(c', h') \quad \text{s.t.}$$

$$c + ph' + b' = y + ph$$

$$c' = y' + Rb' - \delta h'$$

Exercise 1: When $p \uparrow$ exogenously is individual with h better off?

$$\frac{\partial V}{\partial p} = \lambda(h - h'), \quad \lambda = u_c(c, h)$$

Exercise 2: $p = \frac{u'_h/u'_c - \delta}{R}$. Analogue of $D =$ pref shifter $u(c', \theta h')$. Then:

$$\frac{dV}{\lambda} = h\frac{u'_h/u'_c}{R}d\theta + (b' + ph' - ph)\frac{dR}{R}$$

Exactly analogous to earlier analysis

- if don't plan to move, $h' = h$, exog $p \uparrow$ has no effect on welfare
- welfare effects of $R \downarrow \Rightarrow p \uparrow$ ambiguous, $\theta \uparrow \Rightarrow p \uparrow$ unambiguous
- Note: housing = other assets only to 1st order, 2nd-order terms differ

Takeaways: Welfare effects of asset price changes?

Through lens of standard economic theory:

1. What matters is not asset level but "investment plan" (buy/sell)

2. Source of capital gains matters: dividends vs discount rates

3. For welfare question, to first order no conceptual difference between housing and other assets

Summary

Great paper!

Comments/questions:

1. Return process rules out some channels by assumption
2. Saving behavior in model vis-à-vis data?
3. Agree that wealth inequality lit needs asset prices, portfolio choice
4. Does welfare inequality ↑ if wealth inequality ↑ due to asset prices?
    - it depends...
    - ... on saving behavior of rich, source of capital gains